In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A cancellation system for providing cancellation of interference in a repeater, located between a first endpoint and a second endpoint, comprising:

an echo canceler for canceling echo within said system;

a repeater canceler logically connected to said echo canceler, wherein said repeater canceler cancels coupled signals within said system, wherein said repeater canceler cancels coupled signals by using a data signal transmitted from said second end point to said first endpoint and outputs a second signal; ~~and~~

a bulk delay device that provides a delay to said data signal prior to said data signal being received by said repeater canceler; and

a pulse-shaping filter logically connected to said repeater canceler, said pulse-shaping filter receives the second signal and transmits a third signal, the third signal in compliance with an xDSL protocol.

2. (Currently Amended) A cancellation system for providing cancellation of interference in a repeater, located between a first endpoint and a second endpoint, comprising:

a power feed network, wherein said power feed network communicates signals between said first endpoint and said second endpoint;

an echo canceler for canceling echo within said system; ~~and~~

a repeater canceler logically connected to said echo canceler, wherein said repeater canceler cancels coupled signals within said system, and wherein said coupled signals includes a coupled signal caused by said power feed network.

3. (Original) The system of claim 2, wherein said first endpoint is a central office and said second endpoint is a customer premise.

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4. (Original) The system of claim 2, wherein said coupled signals are caused by at least one tone through capacitor located within said system that assures proper signal continuity from said first endpoint to said second endpoint.

5. (Original) The system of claim 2, wherein said coupled signals are caused by at least one switch located within said system that provides downstream power to a second system located between said first endpoint and said second endpoint.

6. (Original) The system of claim 2, wherein said repeater canceler cancels coupled signals by using a reference signal, wherein said reference signal is a data signal transmitted from said second endpoint to said first endpoint.

7. (Original) The system of claim 6, wherein said data signal is derived from a second repeater canceler that determines a series of proper coefficients for use in minimizing coupled signals resulting from data transmission from said second endpoint to said first endpoint.

8. (Original) The system of claim 2, further comprising a bulk delay device, wherein said bulk delay device provides a delay to a data signal being transmitted via said system before said data signal is transmitted to said repeater canceler.

9. (Currently Amended) A method of canceling interference in a repeater located between a first endpoint and a second endpoint, comprising the steps of:

providing a first and second communication path in said repeater;

amplifying a data signal received from said first endpoint, wherein said data signal is carried through said repeater in said first communication path ~~end point in accordance with an amount of power required to drive said signal to said second endpoint~~;

removing local echo from said amplified data signal;

removing coupled signals from said amplified data signal, wherein the coupled signals are caused by said second communication path ~~introduced by said repeater~~; and

transmitting said data signal to said second endpoint.

10. (Original) The method of claim 9, further comprising the step of converting said amplified signal from an analog signal to a digital signal prior to said step of removing local echo, and converting said amplified signal from a digital signal to an analog signal after said step of removing coupled signals introduced by said repeater.

11. (Original) The method of claim 9, wherein said coupled signals are caused by at least one tone through capacitor located within said repeater that assures proper signal continuity from said first endpoint to said second endpoint.

12. (Original) The method of claim 9, wherein said first endpoint is a central office and said second endpoint is a customer premise.

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13. (Original) The method of claim 9, wherein said coupled signals are caused by at least one switch located within said repeater that provides downstream power to a second repeater located between said first endpoint and said second endpoint.

(original)

14. The method of claim 9, wherein said step of removing coupled signals is performed by using a reference signal, wherein said reference signal is a data signal transmitted from said second endpoint to said first endpoint.

15. (Original) The method of claim 14, wherein said reference signal is derived by the step of determining a series of proper coefficients for use in removing said coupled signals resulting from data transmission from said second endpoint to said first endpoint.

16. (Original) The method of claim 9, further comprising the step of delaying said amplified signal after said step of removing local echo and prior to said step of removing said coupled signals.

17. (Currently Amended) A system for providing cancellation of interference in a repeater, located between a first endpoint and a second endpoint, comprising:

means for amplifying a data signal received from said first endpoint ~~end point in accordance with an amount of power required to drive said signal to said second endpoint~~;

means for providing a first communication path through said repeater, wherein said first communication path carries said amplified data signal;

means for providing a second communication path through said repeater;

means for removing local echo from said amplified data signal;

means for removing coupled signals from said amplified data signal, wherein said coupled signals are caused by said second communicative path means ~~introduced by said repeater~~; and

means for transmitting said data signal to said second endpoint.

18. (Original) The system of claim 17, further comprising a means for converting said amplified signal from an analog signal to a digital signal prior to removing local echo, and a means for converting said amplified signal from a digital signal to an analog signal after removing coupled signals introduced by said repeater.

19. (Original) The system of claim 17, wherein said coupled signals are caused by at least one tone through capacitor located within said repeater that assures proper signal continuity from said first endpoint to said second endpoint.

20. (Original) The system of claim 17, wherein said first endpoint is a central office and said second endpoint is a customer premise.

21. (Original) The system of claim 17, wherein said coupled signals are caused by at least one switch located within said repeater that provides downstream power to a second repeater located between said first endpoint and said second endpoint.

22. (Original) The system of claim 17, wherein said means for removing coupled signals uses a reference signal, wherein said reference signal is a data signal transmitted from said second endpoint to said first endpoint.

23. (Original) The system of claim 22, wherein said data signal is derived by a means for determining a series of proper coefficients for use in removing said coupled signals resulting from data transmission from said second endpoint to said first endpoint.

24. (Original) The system of claim 17, further comprising a means for delaying said amplified signal after removing local echo and prior to removing said coupled signals.

25. (New) A signal repeater located between a first endpoint and a second endpoint, the signal repeater receiving a signal from the first endpoint and transmitting the signal to the second endpoint, the repeater comprising:

a first signal processor having a first receive communication path and a first transmit communication path, wherein the first signal processor receives the signal and processes the signal along the first receive communication path;

a second signal processor in communication with the first signal processor, the second signal processor having a second receive communication path and a second transmit communication path, wherein the first signal processor receives the signal and processes the signal along the second transmit communication path;

an echo canceler connected to the second receive communication path and the second transmit communication path, wherein the echo canceler receives the signal carried through the second transmit communication path and generates an echo cancellation signal for canceling an echo of the signal in the second receive communication path; and

a repeater canceler connected to the first receive communication path, wherein the repeater canceler receives a reference signal related to the signal and generates a crosstalk cancellation signal for canceling in the first receive communication path a crosstalk signal introduced by transmitting the signal from the repeater.

26. (New) The repeater of claim 25, wherein the echo canceler adaptively reduces correlation in signals carried in the second transmit communication path and the second receive communication path.

27. (New) The repeater of claim 26, wherein the echo canceler adaptively determines coefficients for minimizing the correlation between the signal and the echo of the signal.

28. (New) The repeater of claim 25, wherein the repeater canceler adaptively reduces correlation in the signal carried in the first receive communication path and the crosstalk signal.

29. (New) The repeater of claim 28, wherein the repeater canceler adaptively determines coefficients for minimizing the correlation between the signal and the crosstalk signal.